

Tropospheric Wind Monitoring During Day-of-Launch Operations for NASA's Space Shuttle Program

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The Environments Group at the National Aeronautics and Space Administration's Marshall Space Flight Center monitors the winds aloft above Kennedy Space Center (KSC) in support of the Space Shuttle Program day-of-launch operations. Assessment of tropospheric winds is used to support the ascent phase of launch. Three systems at KSC are used to generate independent tropospheric wind profiles prior to launch; 1) high resolution jimsphere balloon system, 2) 50-MHz Doppler Radar Wind Profiler (DRWP) and 3) low resolution radiosonde system. All independent sources are compared against each other for accuracy. To assess spatial and temporal wind variability during launch countdown each jimsphere profile is compared against a design wind database to ensure wind change does not violate wind change criteria.